Claims

1. Vehicle comprising

- a chassis (1),
- at least two mutually separated wheels (3) arranged on a first side (2) of the chassis and two mutually separated wheels (5) on the opposite, second side of the chassis (4), where the wheels are arranged to support the chassis when resting on the ground, and whereby the wheels on the first side are rotatable about axes that are substantially fixed in position in the vertical plane relative to the chassis and where the wheels on the second side are arranged on a frame part (6) that is pivotably arranged relative to the chassis about a substantially central longitudinal axis (8) running between the first and the second sides of the vehicle to create a stability area for the vehicle in the shape of a triangle in the horizontal plane,
- an arrangement (12) to determine the position of the vehicle's tipping point (T) in relation to the stability area and thereby the vehicle's stability,
- means (17) to fix the frame part relative to the chassis on the order of the arrangement to increase the vehicle's stability area to be defined by said wheels,

characterized in that, said means (17) is designed to co-operate with the arrangement so that when the vehicle's tipping point reaches a boundary area (19) of the stability triangle the means starts to gradually increase the resistance against a pivoting of the frame part relative to the chassis about said axis on increasing departure of the tipping point from the triangle's centre so as to gradually increase the stability area and when said tipping point reaches a pre-determined boundary to completely fix the frame part (6) relative to the chassis (1) and form a stability area to be defined by said wheels.

2. Vehicle comprising

- a chassis (1),
- at least two mutually separated wheels (3) arranged on a first side (2) of the chassis and two mutually separated wheels (5) on the opposite, second side of the chassis (4), where the wheels are arranged to support the chassis when resting on the ground, and whereby the wheels on the first side are rotatable about axes that are substantially fixed in position in the vertical plane relative to the chassis and the wheels at the second side are arranged on a frame part (6) that is pivotably arranged relative to the chassis about a substantially central, longitudinal axis (8) running between the first and the second sides of the vehicle to create a stability area for the vehicle in the shape of a triangle in the horizontal plane,
- an arrangement (12) to determine the position of the vehicle's tipping point (T) in relation to the stability area and thus the vehicle's stability,
- means (17) to fix the frame part relative to the chassis on the order of the arrangement to increase the vehicle's stability area to be defined by said wheels,

characterized in that, it comprises means (32) to attach each said wheel (5) on the second side of said frame part which is designed to give the wheel a fixed position relative to the frame part (6) and thus to ensure that the frame part has a fixed distance to the ground on which the wheel is resting on application of a load to the wheel below a pre-determined level, which exceeds the normal load on the wheel when the vehicle is standing on horizontal ground, and to allow a movement of the wheel in the direction towards the frame part on exceeding said determined level of the load on the wheel while storing potential energy and decreasing the distance between the frame part and the ground on which the wheel is resting at the wheel.

3. Vehicle according to claim 1 or 1 and 2, **characterized** in that, it comprises means arranged to communicate with said arrangement (12) and on obtaining information that said tipping point is located at a distance from the stability area's outer boundary which is below a pre-determined value lock the drive means of the vehicle so as to only be able to carry out movements of the vehicle having a stabilising effect in order to move the vehicle's tipping point away from the stability area's outer edge.

4. Vehicle according to claim 1 or 1 and 2 or 3, **characterized** in that, the arrangement (12) is designed to receive parameters necessary for calculating the position of the vehicle's instantaneous centre of gravity from sensors (13-16) included in the vehicle and/or means for controlling the vehicle's operation, to calculate the position of the vehicle's instantaneous centre of gravity, and that the arrangement is arranged to determine the position of said centre of gravity by calculating the position of the vehicle's instantaneous centre of gravity.

5. Vehicle according to claim 1 or 1 and any of claims 2-4, **characterized** in that, the arrangement is arranged to carry out calculations to determine the position of said boundary area and pre-determined boundary (19) while considering the vehicle's instantaneous velocity to reduce the area within the respective boundary as the vehicle increases its velocity.

6. Vehicle according to claim 1 or 1 and any of claims 2-5, **characterized** in that, said means (17) for gradually increasing the resistance against pivoting of the frame part (6) relative to the chassis (1) on departure of the tipping point from the triangle's centre is arranged to engage a resistive force to act against the relative movement between the frame part and the chassis intermittently during time periods, whose length per unit time is controlled to increase in order to achieve said gradual increase.

7. Vehicle according to claim 1 or 1 and any of claims 2-6, **characterized** in that, said means (17) for gradually increasing the resistance against pivoting of the frame part (6) relative to the chassis (1) on departure of the tipping point from the triangle's centre comprises longitudinally variable, pressure-medium-influenced power means (23) arranged to act between the frame part and the chassis with two pressure chambers (25, 26) connected to one another via an outer bypass conduit (27) with valve means (28), and disposed on both sides of a piston (24), and that the valve means are adjustable so as to affect the pressure medium's capability to flow from the first chamber to the second chamber and thereby the resistance against a displacement of the piston and a length change of the power means.

8. Vehicle according to claim 6 and 7, **characterized** in that, said means (17) is arranged to open and close the valve means (28) intermittently, in a controlled way when the vehicle's tipping point reaches said boundary area.

9. Vehicle according to any of claims 6-8, **characterized** in that, the power means (23) is a hydraulic cylinder.

10. Vehicle according to claim 2 or 2 and any of claims 1 and 3-9, **characterized** in that, said means (32) are designed to attach the wheels (5) to the frame part (6) so that the said pre-determined level of load is adapted so that it is exceeded on driving the vehicle with the wheels in question over an obstruction at a velocity above a pre-determined velocity level.

11. Vehicle according to claim 2 or 2 and any of claims 1 and 3-10, **characterized** in that, said means (32) for fixing the wheels (5) to the frame part (6) comprises a resilient member (33) for each wheel arranged between the frame part and a part (35) that carries the wheel's axle, that the resilient member is ar-

ranged to be preloaded against stop means (34) arranged to prevent the resilient member from releasing potential energy by distancing the frame part from the part carrying the wheel axle, and that the degree of pre-loading of the resilient member is adjusted to determine the said pre-determined level of load.

12. Vehicle according to claim 11, **characterized** in that, the resilient member is a mechanical compression spring (33).

13. Vehicle according to any of claims 1 or claim 1 and any of claims 2-12, **characterized** in that, it comprises a lifting unit (7) to lift heavy loads, and that this lifting unit is arranged on said first side (2) of the chassis.

14. Method for controlling the stability of a vehicle against tipping, which comprises a chassis (1), at least two mutually separated wheels (3) arranged on a first side (2) of the chassis and two mutually separated wheels (5) on the opposite, second side of the chassis (4), where the wheels are arranged to support the chassis when resting on the ground, and whereby the wheels on the first side are rotatable about axes that are substantially attached in position in the vertical plane relative to the chassis and where the wheels on the second side are arranged on a frame part (6) that is pivotably arranged relative to the chassis about a substantially central longitudinal axis (8) running between the first and the second sides of the vehicle to create a stability area for the vehicle in the shape of a triangle in the horizontal plane, in which the position the vehicle's tipping point (T) in relation to the stability area and thus the vehicle's stability is determined and the frame part is fixed relative to the chassis when the result of this determination calls for an increase of the vehicle's stability area to be defined by said wheels, **characterized** in that, when the determination results in that the vehicle's tipping point reaches a boundary area (19) of the stability triangle, it begins to gradually increase a resistive force that opposes a pivoting of the frame part relative to the chassis about

said axis on increasing departure of the tipping point from the centre of the triangle to gradually increase the stability area, and when said determination results in that the tipping point reaches a pre-determined boundary the frame part is completely fixed relative to the chassis and creates a stability area defined by said wheels.

15. Method according to claim 14, **characterized** in that, said increase of the resistive force takes place by engaging a resistive force to act against the relative movement between the frame part (6) and the chassis (1) intermittently during time periods, whose length per unit time is controlled to increase in order to achieve said gradual increase.

16. Method according to claim 15, **characterized** in that, said gradual increase of the resistive force against a pivoting of the frame part (6) relative to the chassis (1) takes place by intermittently, in a pulsing way, opening and closing valve means (28) arranged in an outer bypass conduit (27) that interconnects two pressure chambers (25, 26) that are disposed on opposite sides of a piston (24), so as to, in this way, affect the capability of the pressure medium disposed in the pressure chambers to flow from one chamber to the other chamber and thereby the resistance against a displacement of the piston.

17. Computer program that is directly loadable into the internal memory of a computer and comprises software code parts to control the steps of any of claims 14-16 when the program is run on the computer.

18. Computer program according to claim 17 provided at least partly via a network such as the Internet.

19. Computer-readable medium with a registered program thereon, which is designed to cause a computer to control the steps according to any of claims 14-16.